

Canadian Mercury Emissions and Trends

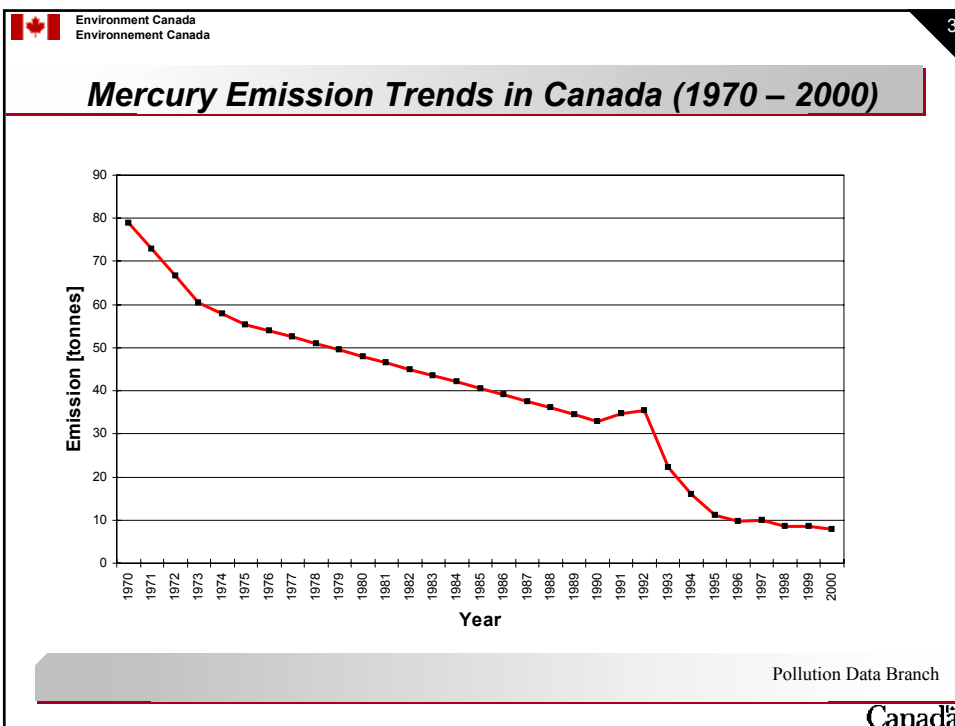
David Niemi
Pollution Data Branch
Environment Canada

Binational Toxics Strategy on Mercury
Workgroup Meeting
Windsor ON, May 30, 2002

Atmospheric Mercury Emissions Inventory

◆ Information Sources:

- National Pollutant Release Inventory (NPRI)
 - Mandatory Data Collection Program
 - 268 Substances (Air, Water, Solid)
- Criteria Air Contaminants Emissions Inventory
 - SO₂, NO_x, VOC, CO, TPM, PM₁₀, PM_{2.5}, Ammonia
- Accelerated Reduction / Elimination of Toxics program (ARET)
 - Voluntary Program That Targets 117 Toxic Substances
- Industry Supplied Estimates
- Industrial Consultations



Environment Canada
Environnement Canada

4

Mercury Emissions Trend In Canada

- ♦ Major Reductions have been achieved in:
 - Base Metal Smelting (98% or 27 tonnes)
 - Chlor-Alkalie Industry (99% or 23.9 tonnes)
 - Agriculture/Household Fungicides (100% or 6.5 tonnes)
 - Incineration Sectors (80% or 3 tonnes)
- ♦ Smaller reductions also achieved in many sectors such as: pharmaceutical products, fluorescent lamp manufacture, and mercury mining

Pollution Data Branch

Canada



Mercury Emissions Trend In Canada

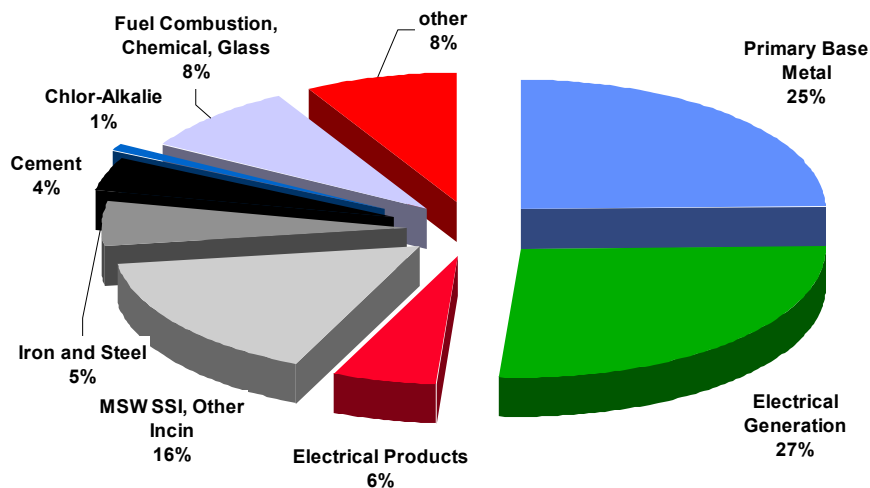
Additional Reductions Are Anticipated In The Coming Years:

- ♦ Development And Implementation Of Canada-Wide Standards For Mercury
 - Base Metal Smelting, Incineration
 - Electrical Power Generation
- ♦ Multi-pollutant Emission Reduction Strategies (MERS)
 - Electrical Power Generation
 - Iron and Steel
 - Pulp & Paper and Wood Products, etc.

Pollution Data Branch



Preliminary Mercury Emissions in Canada (2000)



Pollution Data Branch





Preliminary Mercury Emissions in Canada (2000)

♦ Information Sources:

- National Pollutant Release Inventory (NPRI 73%)
- Criteria Air Contaminants Inventory (CAC 16%)
- Accelerated Reduction / Elimination of Toxics (ARET 5%)
- Industry Supplied Estimates (5%)
- Industrial Consultations (1%)

Pollution Data Branch



Changes To The NPRI

Major Changes To The NPRI Reporting Criteria For Mercury, Since The 2000 Reporting Year

♦ Old Reporting Criteria:

- 10 Full-Time Employees (or 20,000 hours)
- Manufacture, Process or Otherwise Used 10 Tonnes Or More
- Manufacture, Process or Otherwise Used In A Concentration Greater Than or Equal To 1%

♦ New Reporting Criteria:

- Manufacture, Process or Otherwise use 5 kg of mercury,
- With An Exemption For Dentists

Pollution Data Branch





Analysis Of The NPRI 2000 Data

◆ Changes Between 1999 And 2000 Data

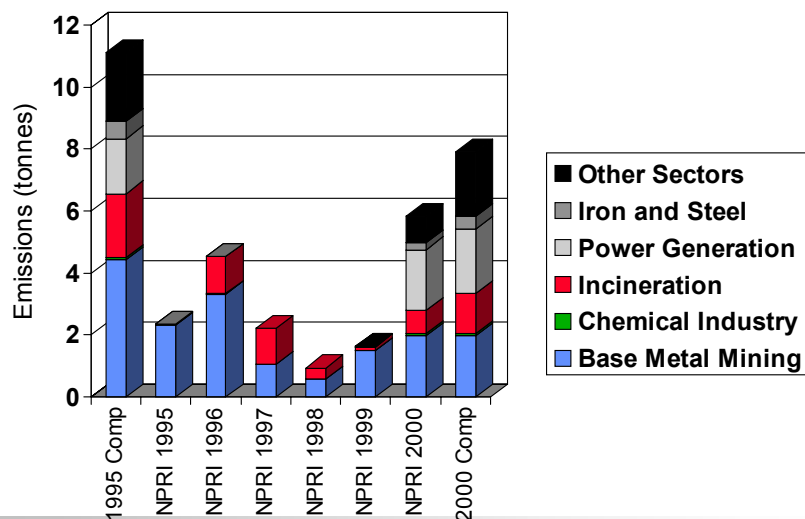
- 1000% Increase in Mercury Reports (from 18 to 199)
- 350% Increase in Total Releases Reported (from 1.98 to 8.9 t)
- 230% Increase in Air Releases Reported (from 1.76 to 5.82 t)

- ✓ NPRI captures industrial and commercial sources of mercury
- ✓ Additional emission estimates required to compile the comprehensive emissions inventory
- ✓ NPRI 2000 Information Accounts for 73% Of The Air Releases, Compared To 21% in 1995

Pollution Data Branch

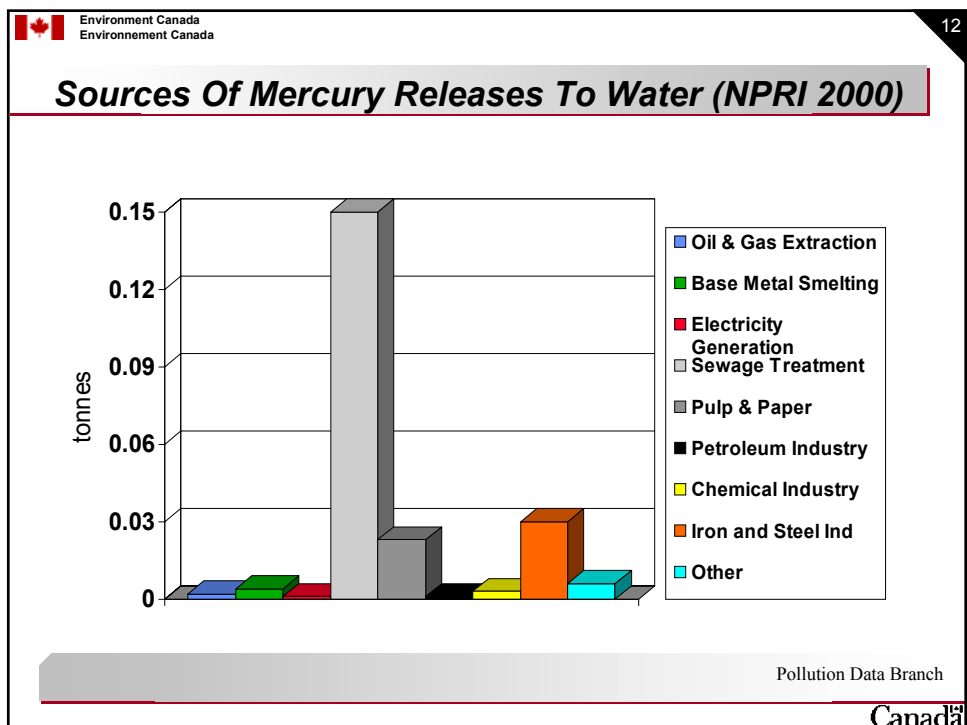
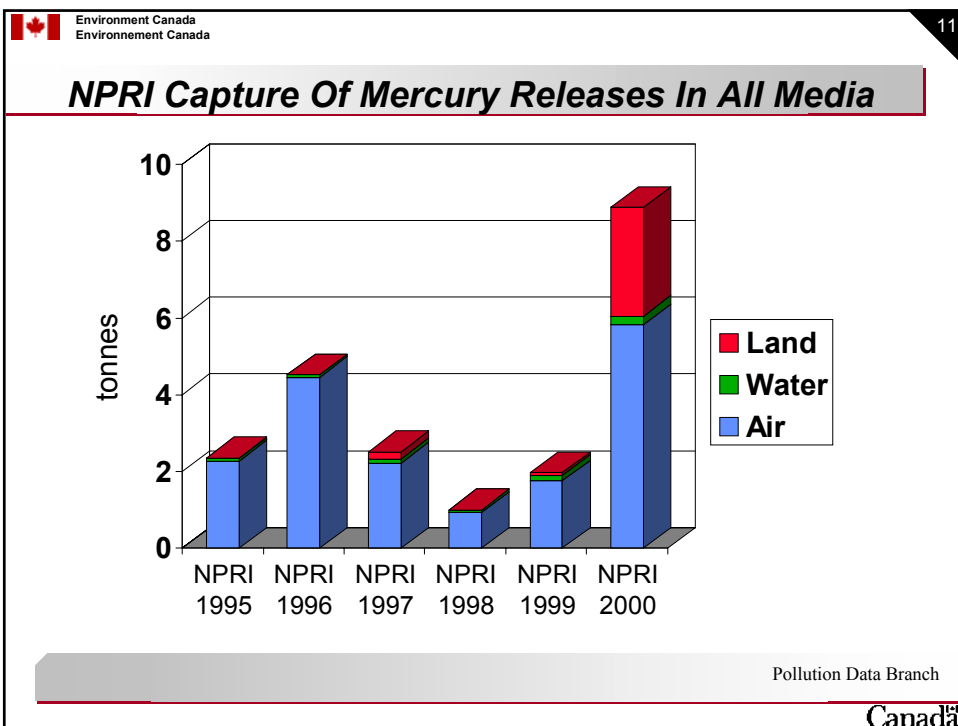


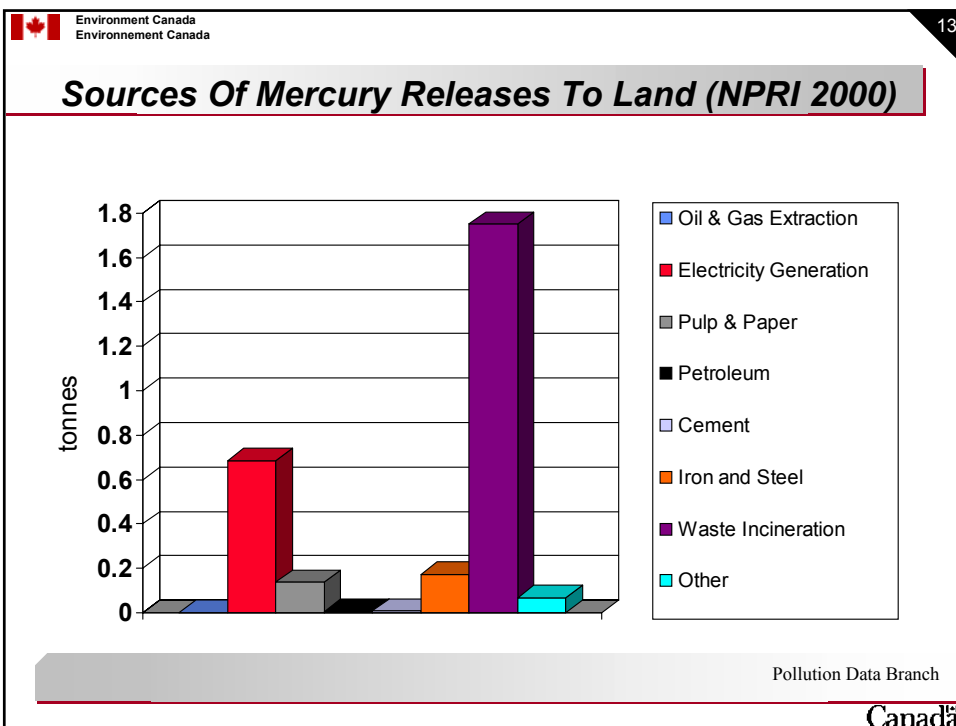
NPRI Contribution To The Comprehensive Emissions Inventory



Pollution Data Branch







Environment Canada
Environnement Canada

14

Canadian Mercury Inventory Improvements

- ◆ Electric Power Generation Sector
 - Recent testing contributed to improved emission estimates for the 2000 data year
 - Working with the Association and Members to fine-tune historical years
- ◆ Collection Of Information Through The NPRI
 - Lower threshold require more facilities to report their releases
 - More facility emissions are publicly available

Pollution Data Branch

Canada



Upcoming Emissions Inventory Activities

- ◆ Publication Of The Canadian Mercury Emissions Trend (1970 to 2000) (summer 2002)
- ◆ Compilation Of Annual Mercury Emissions Inventories (starting in 2002)
- ◆ 2000 Mercury Inventory Database For Modeling (available middle 2002)
- ◆ Mercury Emissions Forecast to 2015 (available latter 2002)
- ◆ Speciation Of The Hg Inventory (begin latter 2002)

Pollution Data Branch

Canada